Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claims 1-20 (canceled).

21. (currently amended) A rewritable phase-change optical recording medium, said recording medium being initialized at least by ~~the steps as claimed in claim 19~~ irradiating said recording medium with a scanning beam spot emitted from a high power semiconductor laser device,

wherein an energy density input by said beam spot is equal to, or less than, 1000 J/m^2.

Claims 22-23 (canceled).

24. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~22~~ 21,

wherein a scanning speed of said beam spot is in a range of 3.5 m/sec to 6.5 m/sec.

Claims 25-26 (canceled).

27. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~25~~ 21,

wherein an intensity of the emission from said semiconductor laser device is equal to, or greater than, 330 mW.

Claims 28-29 (canceled).

30. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~28~~ 21,

wherein a width of an overlapped portion, which is formed as an overlap of irradiated portions of two neighboring irradiation tracks on said recording medium during two consecutive rotations of said recording medium in initializing steps, is equal to, or less than, 0.5 Wr, where Wr is a width at half maximum of a spatial laser power distribution in a direction perpendicular to a beam scanning direction.

Claims 31-32 (canceled).

33. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~31~~ 21,

wherein an energy density input by said beam spot during one period of

through scan is equal to, or greater than, 600 J/m^2.

Claims 34-35 (canceled).

36. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~34~~ 21,

wherein a scanning speed of said beam spot is in a range of 3.5 m/sec to 6.5 m/sec.

Claims 37-38 (canceled).

39. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~37~~ 21,

wherein an intensity of the emission from said semiconductor laser device is equal to, or greater than, 330 mW.

Claims 40-41 (canceled).

42. (currently amended) A rewritable phase-change optical recording medium~~, said recording medium being initialized at least by the steps~~ as claimed in claim ~~40~~ 21,

wherein a width of an overlapped portion, which is formed as an overlap of irradiated portions of two neighboring irradiation tracks on said recording medium during two consecutive rotations of said recording medium in initializing steps, is equal to, or less than, 0.5 Wr, where Wr is a width at half maximum of a spatial laser power distribution in a direction perpendicular a scanning direction.

Claim 43 (canceled).

44. (currently amended) A phase-change optical recording medium comprising a recording layer, wherein said recording layer contains information recorded in advance therein corresponding to S and R values for selecting an optimum recording power, said S and R values being specified by ~~said~~ a method ~~as claimed in claim 43~~ comprising the steps of:

writing a series of information data, as test recording runs, with recording power of laser beam consecutively varied in a range of 15 mW to 18 mW to thereby generate a recorded pattern including low and high reflective portions;

reading out signals from said low and high reflective portions on said recording medium to obtain recorded signal amplitude, m, corresponding to said recording power, P;

calculating a normalized gradient, g(P), using an equation,

$g(P)= (m/\Delta m)/(P/\Delta P)$,

where ΔP is an infinitesimal change in the vicinity of P, and Δm is an infinitesimal change in the vicinity of m;

determining an optimum recording power, after judging adequacy of the magnitude of said recording power based on thus calculated normalized gradient, g(P);

selecting a specific number, S, from the numbers in the range of 0.2 to 2.0 based on said calculated normalized gradient, g(P);

obtaining a value of said recording power, Ps, which coincide with said specific number, S, presently selected;

selecting a specific number, R, based on the obtained recording power, Ps, from the numbers in the range of 1.0 to 1.7; and

multiplying said recording power, Ps, by said specific number, R, to obtain an optimum recording power, P_0.

45. (original) The phase-change optical recording medium according to claim 44, wherein $1.2 \leq S \leq 1.4$, and $1.1 \leq R \leq 1.3$.

46. (original) The phase-change optical recording medium according to claim 44, wherein said recording medium is recordable at a recording velocity ranging from 4.8 m/sec to 14.0 m/sec.

47. (currently amended) A phase-change optical recording medium comprising a recording layer, wherein said recording layer contains information regarding a P_t value recorded in advance therein, said P_t value corresponding to ~~said~~ an optimum recording power, P_0, specified by ~~said~~ a method ~~as claimed in~~

~~claim 43~~ comprising the steps of:

writing a series of information data, as test recording runs, with recording power of laser beam consecutively varied in a range of 15 mW to 18 mW to thereby generate a recorded pattern including low and high reflective portions;

reading out signals from said low and high reflective portions on said recording medium to obtain recorded signal amplitude, m, corresponding to said recording power, P;

calculating a normalized gradient, g(P), using an equation,

$g(P)= (m/\Delta m)/(P/\Delta P)$,

where ΔP is an infinitesimal change in the vicinity of P, and Δm is an infinitesimal change in the vicinity of m;

determining an optimum recording power, after judging adequacy of the magnitude of said recording power based on thus calculated normalized gradient, g(P);

selecting a specific number, S, from the numbers in the range of 0.2 to 2.0 based on said calculated normalized gradient, g(P);

obtaining a value of said recording power, Ps, which coincide with said specific number, S, presently selected;

selecting a specific number, R, based on the obtained recording power, Ps, from the numbers in the range of 1.0 to 1.7; and

multiplying said recording power, Ps, by said specific number, R, to obtain an optimum recording power, P_0.

48. (original) The phase-change optical recording medium according to claim 47, wherein said recording medium is recordable at a recording velocity ranging from 4.8 m/sec to 14.0 m/sec.